

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU2004/001821

## A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. <sup>7</sup>: F01N 3/038, 3/10, 3/20; B01D 53/94

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

DPWI: Catalyst, catalytic, convert, device, exhaust, insert, eddy, turbulence, lag, lamella, wake, lamella. Heat, hot, therm, temperature and IPC F01N 3/-, F01N 7/-, B01D 53/-

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
P, X	US 6737027 B1 (MYERS) 18 May 2004 Column 2 lines 50-60, column 3 lines 21-45	1-3
X	JP 9-79032 A (CALSONIC CORP) 25 March 1997 Figures 4 and 6 and Derwent patent abstract accession no. 97-242893/22, classes Q51 Q52 Q66.	1, 11, 12, 15, 16
X	GB 2334305 A (FORD GLOBAL TECHNOLOGIES, INC.) 18 August 1999 Whole document	1, 11-16
X	WO 2002/068807 A1 (MITSUBISHI JIDOSHA KOGYO KABUSHIKI KAISHA) 6 September 2002 (equiv. US 6711892 publication date: 30 March 2004) Figure 1 and Derwent abstract accession no 2002-657730/70, classes E36 H06 J04 (J01)	1, 11, 12, 15, 16

☒ Further documents are listed in the continuation of Box C
 ☒ See patent family annex

* Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent but published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"&" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

 Date of the actual completion of the international search  
 21 February 2005

 Date of mailing of the international search report  
 08 MAR 2005

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C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 4727796 A (DERKACH) 1 March 1988 Whole document	1, 11-13
X	US 5355673 A (STERLING et al) 18 October 1994 Whole document	1, 11, 1,2, 14, 15

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## Box No. II Observations where certain claims were found unsearchable (Continuation of Item 2 of first sheet)

This international search report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:
  
2. ☐ Claims Nos.:  
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
  
3. ☐ Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a)

## Box No. III Observations where unity of invention is lacking (Continuation of Item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

See supplement sheet

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☒ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
  
4. ☐ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

### Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

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### Supplemental Box

(To be used when the space in any of Boxes I to VIII is not sufficient)

#### Continuation of Box No: III

The international application does not comply with the requirements of unity of invention because it does not relate to one invention or to a group of inventions so linked as to form a single general inventive concept. In coming to this conclusion the International Searching Authority has found that there are different inventions as follows:

1. Claims 1-10 are directed to a device to improve the working of an inline catalytic converter. It is considered that the device comprises a particular profile comprising a plurality of recesses or cavities to facilitate improve heat absorption comprises a first "special technical feature".
2. Claims 1, 11-16 are directed to a device to improve the working of an inline catalytic converter. It is considered that device comprising a valve which is operable between an open and a closed or partially closed position and located downstream from the catalytic converter to increase the resident time of exhaust gas around the catalytic converter comprises a second special technical feature.

These groups are not so linked as to form a single general inventive concept, that is, they do not have any common inventive features, which define a contribution over the prior art. The common concept linking together these groups of claims is the general broad feature of claim 1. However this concept is not novel in the light of all the documents cited in this report. Therefore these claims lack unity a posteriori.

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International application No.

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This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report			Patent Family Member			
US	5355673	NONE				
US	4727796	NONE				
WO	02068807	EP 1365137	JP	2002256953	JP	2003097333
		US 6711892	US	2003115854		
GB	2334305	NONE				
JP	09079032	NONE				
US	6737027	NONE				
Due to data integration issues this family listing may not include 10 digit Australian applications filed since May 2001.						
END OF ANNEX						